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1600

RAW SEQUENCE LISTING

DATE: 04/30/2003

PATENT APPLICATION: US/09/674,817B

TIME: 11:33:05

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3 <110> APPLICANT: Hoechst Schering AgrEvo GmbH
 4 LTRZ, Horst
 5 LsTTICKE, Stephanie
 6 ABEL, Gernot
 7 GENSCHEL, Ulrich
 9 <120> TITLE OF INVENTION: NUCLEIC ACID MOLECULES WHICH CODE FOR ENZYMES DERIVED FROM
 WHEAT AND
 10 WHICH ARE INVOLVED IN THE SYNTHESIS OF STARCH
 12 <130> FILE REFERENCE: 514413-3849.1
 C--> 14 <140> CURRENT APPLICATION NUMBER: US/09/674,817B
 C--> 14 <141> CURRENT FILING DATE: 2000-11-06
 14 <150> PRIOR APPLICATION NUMBER: WO 99/58690
 15 <151> PRIOR FILING DATE: 1999-11-18
 17 <150> PRIOR APPLICATION NUMBER: DE 198 20 608.9
 18 <151> PRIOR FILING DATE: 1998-05-08
 20 <150> PRIOR APPLICATION NUMBER: 09/674,817
 21 <151> PRIOR FILING DATE: 2000-11-06
 23 <160> NUMBER OF SEQ ID NOS: 11
 25 <170> SOFTWARE: PatentIn version 3.1
 27 <210> SEQ ID NO: 1
 28 <211> LENGTH: 2997
 29 <212> TYPE: DNA
 30 <213> ORGANISM: Triticum aestivum L. cv. Florida
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 34 <222> LOCATION: (3)..(296)
 35 <223> OTHER INFORMATION:
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52 Ser Gly Pro Ala Pro Arg Leu Arg Arg Trp Arg Pro Asn Ala Thr	
53 1 5 10 15	
55 gcg ggg aag ggg gtc ggc gag gtg tgc gcc gcg gtt gtc gag gcg gcg	95
56 Ala Gly Lys Gly Val Gly Glu Val Cys Ala Ala Val Val Glu Ala Ala	
57 20 25 30	
59 acg aag gta gag gac gag ggg gag gag gac gag cgc gtg gcg gag gac	143
60 Thr Lys Val Glu Asp Glu Gly Glu Asp Glu Pro Val Ala Glu Asp	

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64	Arg Tyr Ala Leu Gly Gly Ala Cys Arg Val Leu Ala Gly Met Pro Ala			
65	50	55	60	
67	ccg ctg ggc gcc acc gcg ctc gcc ggc ggg gtc aat ttc gcc gtc tat			239
68	Pro Leu Gly Ala Thr Ala Leu Ala Gly Gly Val Asn Phe Ala Val Tyr			
69	65	70	75	
71	tcc ggc gga gcc acc gcc gcg ctc tgc ctc ttc acg cca gaa gat			287
72	Ser Gly Gly Ala Thr Ala Ala Leu Cys Leu Phe Thr Pro Glu Asp			
73	80	85	90	95
75	ctc aag gcg gtgggttgc ctcccgagta gagttcatca gctttgcgtg			336
76	Leu Lys Ala			
79	cggccgcgcgc ccctttttg ggcctgcaat ttaagtttg tactggggca aatgctgcag			396
81	gat agg gtg acc gag gag gtt ccc ctt gac ccc ctg atg aat cgg acc			444
82	Asp Arg Val Thr Glu Glu Val Pro Leu Asp Pro Leu Met Asn Arg Thr			
83	100	105	110	
85	ggg aac gtg tgg cat gtc ttc atc gaa ggc gag ctg cac aac atg ctt			492
86	Gly Asn Val Trp His Val Phe Ile Glu Gly Glu Leu His Asn Met Leu			
87	115	120	125	130
89	tac ggg tac agg ttc gac ggc acc ttt gct cct cac tgc ggg cac tac			540
90	Tyr Gly Tyr Arg Phe Asp Gly Thr Phe Ala Pro His Cys Gly His Tyr			
91	135	140	145	
93	ctt gat gtt tcc aat gtc gtg gtg gat cct tat gct aag gca gtg ata			588
94	Leu Asp Val Ser Asn Val Val Val Asp Pro Tyr Ala Lys Ala Val Ile			
95	150	155	160	
97	agc cga ggg gag tat ggt gtt cca gcg cgt ggt aac aat tgc tgg cct			636
98	Ser Arg Gly Glu Tyr Gly Val Pro Ala Arg Gly Asn Asn Cys Trp Pro			
99	165	170	175	
101	cag atg gct ggc atg atc cct ctt cca tat agc acg ttt gat tgg gaa			684
102	Gln Met Ala Gly Met Ile Pro Leu Pro Tyr Ser Thr Phe Asp Trp Glu			
103	180	185	190	
105	ggc gac cta cct cta aga tat cct caa aag gac ctg gta ata tat gag			732
106	Gly Asp Leu Pro Leu Arg Tyr Pro Gln Lys Asp Leu Val Ile Tyr Glu			
107	195	200	205	210
109	atg cac ttg cgt gga ttc acg aag cat gat tca agc aat gta gaa cat			780
110	Met His Leu Arg Gly Phe Thr Lys His Asp Ser Ser Asn Val Glu His			
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114	Pro Gly Thr Phe Ile Gly Ala Val Ser Lys Leu Asp Tyr Leu Lys Glu			
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117	ctt gga gtt aat tgt att gaa tta atg ccc tgc cat gag ttc aac gag			876
118	Leu Gly Val Asn Cys Ile Glu Leu Met Pro Cys His Glu Phe Asn Glu			
119	245	250	255	
121	ctg gag tac tca acc tct tcc aag atg aac ttt tgg gga tat tct			924
122	Leu Glu Tyr Ser Thr Ser Ser Lys Met Asn Phe Trp Gly Tyr Ser			
123	260	265	270	
125	acc ata aac ttc ttt tca cca atg aca aga tac aca tca ggc ggg ata			972
126	Thr Ile Asn Phe Phe Ser Pro Met Thr Arg Tyr Thr Ser Gly Gly Ile			
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131	295 300 305	
133	gag gct cac aaa cgg gga att gag gtg atc ctg gat gtt gtc ttc aac	1068
134	Glu Ala His Lys Arg Gly Ile Glu Val Ile Leu Asp Val Val Phe Asn	
135	310 315 320	
137	cat aca gct gag ggt aat gag aat ggt cca ata tta tca ttt aag ggg	1116
138	His Thr Ala Glu Gly Asn Glu Asn Gly Pro Ile Leu Ser Phe Lys Gly	
139	325 330 335	
141	gtc gat aat act aca tac tat atg ctt gca ccc aag gga gag ttt tat	1164
142	Val Asp Asn Thr Tyr Tyr Met Leu Ala Pro Lys Gly Glu Phe Tyr	
143	340 345 350	
145	aac tat tct ggc tgt ggg aat acc ttc aac tgt aat cat cct gtg gtt	1212
146	Asn Tyr Ser Gly Cys Gly Asn Thr Phe Asn Cys Asn His Pro Val Val	
147	355 360 365 370	
149	cgt caa ttc att gta gat tgt tta aga tac tgg gtg acg gaa atg cat	1260
150	Arg Gln Phe Ile Val Asp Cys Leu Arg Tyr Trp Val Thr Glu Met His	
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153	gtt gat ggt ttt cgt ttt gat ctt gca tcc ata atg acc aga ggt tcc	1308
154	Val Asp Gly Phe Arg Phe Asp Leu Ala Ser Ile Met Thr Arg Gly Ser	
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157	agt ctg tgg gat cca gtt aac gtg tat gga gct cca ata gaa ggt gac	1356
158	Ser Leu Trp Asp Pro Val Asn Val Tyr Gly Ala Pro Ile Glu Gly Asp	
159	405 410 415	
161	atg atc aca aca ggg aca cct ctt gtt act cca cca ctt att gac atg	1404
162	Met Ile Thr Thr Gly Thr Pro Leu Val Thr Pro Pro Leu Ile Asp Met	
163	420 425 430	
165	atc agc aat gac cca att ctt gga ggc gtc aag ctc att gct gaa gca	1452
166	Ile Ser Asn Asp Pro Ile Leu Gly Gly Val Lys Leu Ile Ala Glu Ala	
167	435 440 445 450	
169	tgg gat gca gga ggc ctc tat caa gta ggt caa ttc cct cac tgg aat	1500
170	Trp Asp Ala Gly Leu Tyr Gln Val Gly Gln Phe Pro His Trp Asn	
171	455 460 465	
173	gtt tgg tct gag tgg aat ggg aag tac cgg gac att gtg cgt caa ttc	1548
174	Val Trp Ser Glu Trp Asn Gly Lys Tyr Arg Asp Ile Val Arg Gln Phe	
175	470 475 480	
177	att aaa ggc act gat gga ttt gct ggt ggt ttt gcc gaa tgt ctt tgt	1596
178	Ile Lys Gly Thr Asp Gly Phe Ala Gly Phe Ala Glu Cys Leu Cys	
179	485 490 495	
181	gga agt cca cac cta tac cag gtaagttgtg gcaatacttg taaatgagtt	1647
182	Gly Ser Pro His Leu Tyr Gln	
183	500 505	
185	gagtgaatgt cacctggatt ttttatatat accacatgt gatacacatc taaaatata	1707
187	acaatcatag tgtatgcata tgcatttggc taagaagtt tagtgtatac actagtgtca	1767
189	tatatagggtt ttaacaccca acttgccat gaaggaacat agggcttct agttatctt	1827
191	tttatttgtc cggtaataa tccactgaaa aattccagcc atgtcatttt ttaggggggg	1887
193	agaagaaact atattgattt gccccctaa aagaagccat ctcagaattc ataggtaaat	1947
195	tgctttctg taaagaaagg aaaacgactt catactttct atcggtgcta acttagctcg	2007
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202			Ala	Gly	Gly	Arg	Lys	Pro	Trp	His	Ser	Ile	Asn				
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205	ttt	gta	tgt	gca	cat	gat	gga	ttt	aca	ctg	gct	gat	ttg	gta	aca	tat	2225
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209	aat	aag	aag	tac	aat	tta	cca	aat	ggg	gag	aac	aac	aga	gat	gga	gaa	2273
210	Asn	Lys	Lys	Tyr	Asn	Leu	Pro	Asn	Gly	Glu	Asn	Asn	Arg	Asp	Gly	Glu	
211				535					540			545					
213	aat	cac	aat	ctt	agc	tgg	aat	tgt	ggg	gag	gaa	gga	gaa	ttc	gca	aga	2321
214	Asn	His	Asn	Leu	Ser	Trp	Asn	Cys	Gly	Glu	Glu	Gly	Glu	Gly	Phe	Ala	Arg
215				550					555			560					
217	ttg	tct	gtc	aaa	aga	ttg	agg	aag	agg	cag	atg	cgc	aat	ttc	ttt	gtt	2369
218	Leu	Ser	Val	Lys	Arg	Leu	Arg	Lys	Arg	Gln	Met	Arg	Asn	Phe	Phe	Val	
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230	Tyr	Val	Asn	Tyr	Phe	Arg	Trp	Asp	Lys	Lys	Glu	Gln	Tyr	Ser	Glu	Leu	
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250	Thr	Ser	His	Leu	Pro	Ala	Val	Val	Glu	Leu	Pro	Glu	Arg	Ala	Gly	Arg	
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253	cg	tg	gaa	ccg	gt	gt	gac	aca	gg	cc	g	cc	tac	gac	ttc		2801
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255				710					715			720					
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258	Leu	Thr	Asp	Asp	Leu	Pro	Asp	Arg	Ala	Leu	Thr	Ile	His	Gln	Phe	Ser	
259	725				730					735			740				
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262	His	Phe	Leu	Tyr	Ser	Asn	Leu	Tyr	Pro	Met	Leu	Ser	Tyr	Ser	Ser	Val	
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286 gaatgcccgc ggcgtggc gccaccgcgc tcgcccggcgg ggtcaatttc gccgtctatt 240	
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L:14 M:271 C: Current Filing Date differs, Replaced Current Filing Date
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